DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SAWYER LAKE	Lake Area (ha): 31.77
Town: GILMANTON	Maximum depth (m): 4.5
County: Belknap	Mean depth (m): 3.0
River Basin: Merrimack	Volume (m^3) : 953500
Latitude: 43°26'59" N	Relative depth: 0.7
Longitude: 71°24'18" W	Shore configuration: 1.35
Elevation (ft): 993	Areal water load (m/yr): 5.75
Shore length (m): 2700	Flushing rate (yr^{-1}) : 1.90
Watershed area (ha): 378.	2 P retention coeff.: 0.63
% watershed ponded: 0.	O Lake type: natural w/dam

BIOLOGICAL:	12 January 1993	29 June 1992
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	ASTERIONELLA 45%
#2		(NET PHYTOPLANKTON
#3		VERY SPARSE)
PHYTOPLANKTON ABUNDANCE (cells/mL)		805
CHLOROPHYLL-A (µg/L)		1.99
DOM. ZOOPLANKTON (% TOTAL) #1	SYNCHAETA 77%	CONOCHILUS 27%
#2	KELLICOTTIA 19%	DAPHNIA 27%
#3		
ROTIFERS/LITER	401	25
MICROCRUSTACEA/LITER	<1	35
ZOOPLANKTON ABUNDANCE (#/L)	401	60
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		3.5
BOTTOM DISSOLVED OXYGEN (mg/L)	11.1	7.2
BACTERIA (E. coli, #/100 ml) #1		1
#2		126
· #3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None Hypolimnion volume (m^3) : None Anoxic volume (m^3) : None

CHEMICAL:	Lake: SAWYER LAKE Town: GILMANTON				
	12 January 1993		29 June 1992		
DEPTH (m)	1.0	3.0	1.0		3.0
pH (units)	6.2	6.2	6.8		6.6
A.N.C. (Alkalinity)	4.9	4.9	3.3		3.4
NITRATE NITROGEN	0.12	0.12	< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.16	0.25			
TOTAL PHOSPHORUS	0.015	0.015	0.010		0.007
CONDUCTIVITY (µmhos/cm)	54.3	57.0	51.3		50.5
APPARENT COLOR (cpu)	36	36	17		18
MAGNESIUM			0.74		
CALCIUM			2.5		
SODIUM			5.9		
POTASSIUM			0.56		
CHLORIDE	8	9	7		7
SULFATE	6	6	5		5
TN : TP	19	25		<u> </u>	
CALCITE SATURATION INDEX			3.6		

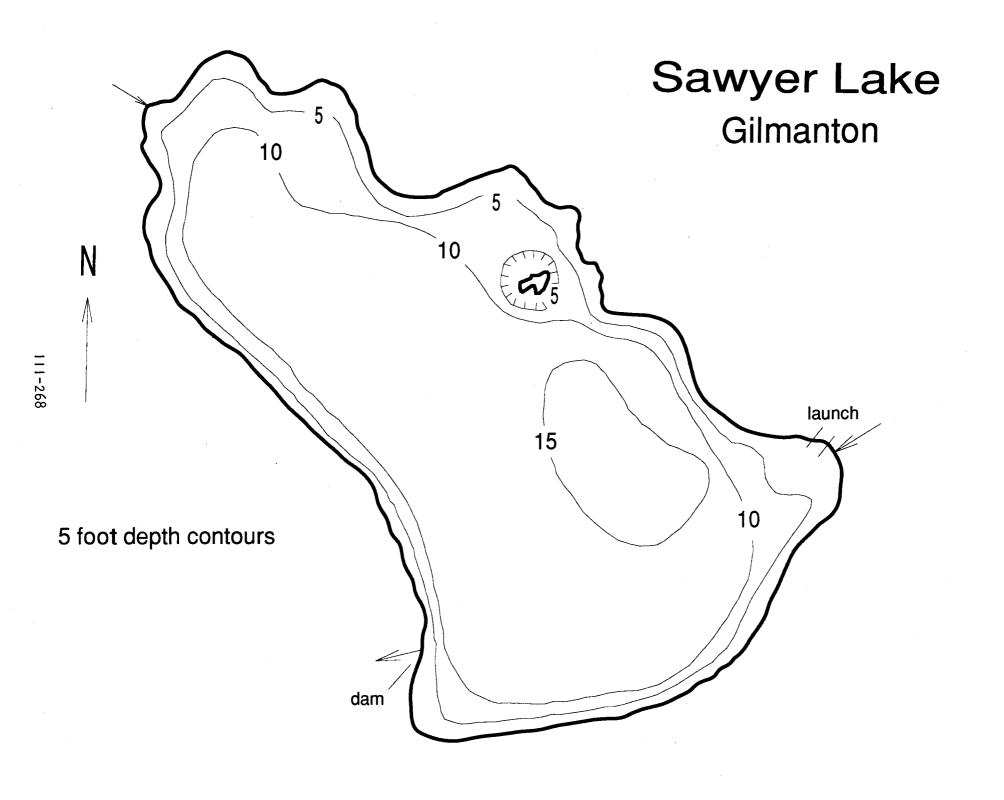
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1992

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	0	0	2	Oligo.

COMMENTS:

- 1. Also known as Sawyer Reservoir.
- 2. Shoreline of lake was fully developed with cottages.
- 3. The lake had two beaches, and a boat launch site was present near the eastern inlet. Our understanding is that these belong to the private lake colony, and are not open to the general public.
- 4. This lake was previously surveyed and classified in 1977. There was no change in classification between the two years. The algae level was significantly less in 1992 -- in 1977 there was a small bloom of bluegreen algae.



FIELD DATA SHEET

LAKE: SAWYER LAKE

TOWN: GILMANTON

DATE: 06/29/92

WEATHER: SUNNY, MILD AND BREEZY

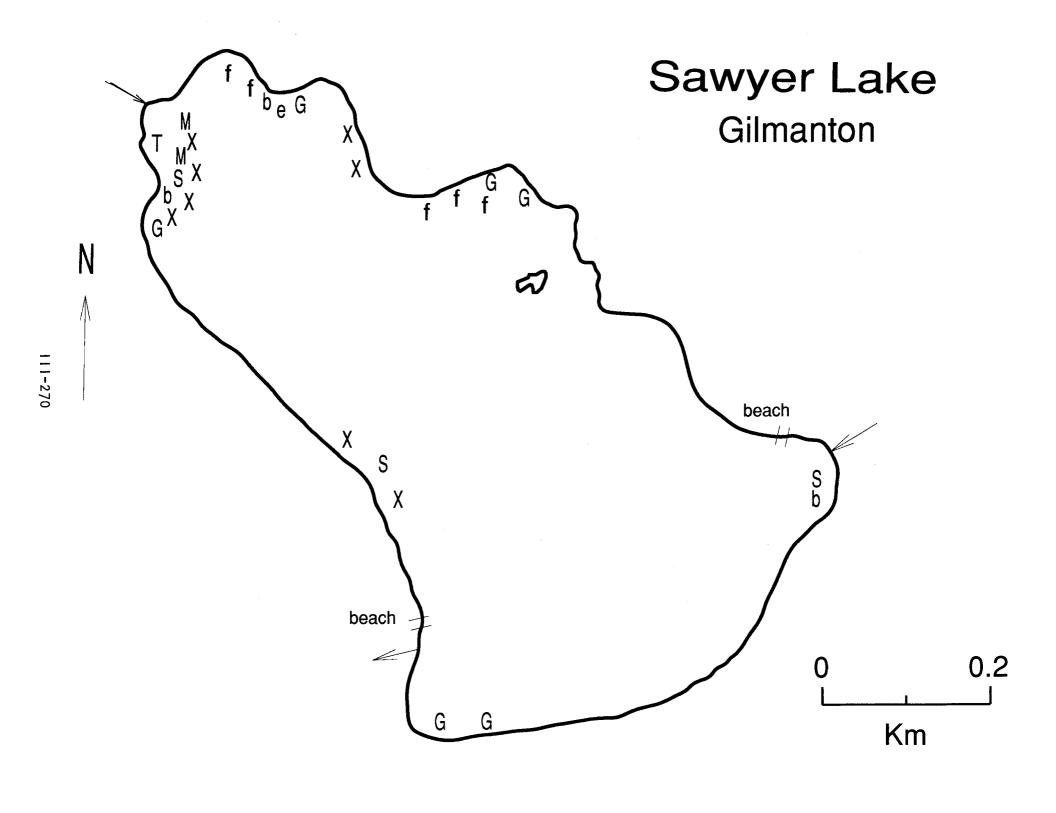
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	22.1	8.0	92 %
1.0	22.0	8.0	92 %
2.0	21.8	8.0	90 %
3.0	20.0	8.0	88 %
4.0	19.2	7.2	77 %
7 7 Met 400			
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SECCHI DISK (m): 3.5 COMMENTS:

BOTTOM DEPTH (m): 4.5

TIME: 1230

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

LAKE: SAWYER LAKE		TOWN: GILMANTON	DATE: 06/29/92	
		NAME	ABUNDANCE	
Key	GENERIC	COMMON	ABUNDANCE	
U	Utricularia	Bladderwort	Sparse	
M	Myriophyllum humile	Water milfoil	Sparse	
Х		Bottom growth	Sparse	
G	Gramineae	Grass family	Sparse	
b	Scirpus	Bulrush	Sparse	
f	Chlorophyceae	Filamentous green algae	Sparse	
е	Eleocharis	Spike rush	Sparse	
T	Typha	Cattail	Sparse	
S	Sparganium	Bur reed	Sparse	
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GENERAL OBSERVATIONS:

- 1. Vascular plants were sparse -- no problem to recreational activities.
- 2. Chroomonas (40%) and Microcystis (15%) were the dominant genera of whole-water phytoplankton. Cryptomonads (40%), greens (30%) and blue-greens (20%) were the dominant classes.

OVERALL ABUNDANCE: Sparse